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Summer Creel Census in the Canadian Waters of the Western Basin of Lake Erie, 1984

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INTRODUCTION

A roving on-water creel census was conducted in the Canadian waters of the Western Basin of Lake Erie during July and August, 1984. This creel census is a continuation of a study initiated in 1975 to provide fishery management information.

The objectives of the 1984 creel census were:

1. to quantify the angling catch and harvest particularly of yellow pickerel[1] (walleye) (Stizostedion vitreum vitreum) and smallmouth bass;
2. to estimate the angling effort and success;
3. to monitor the age and length composition of the walleye and smallmouth bass harvest; and
4. to determine the resident to non-resident angler ratio.

Creel census techniques used in the 1984 survey were similar to those used from 1975 to 1983 and year-to-year comparisons can be made directly.

[1] Yellow pickerel is the preferred common name among Ontario anglers for this species and is recognized as such by the Ontario Ministry of Natural Resources. However, the international users of this report recognize the common name walleye (Robins et al. 1980) which is the name used throughout this report.

DESCRIPTION OF THE STUDY AREA

The study area was confined to part of the Canadian waters of Lake Erie's Western Basin. This area was divided into four sectors in the original study (Duckworth and Paine 1975) which defined fish species distribution and angling effort and success. Least angling effort was expended in Sector III and none of the surveyed anglers caught any walleye. For these reasons, Sector III was omitted from the census from 1976 to 1984. The lake portion of Sector IV was omitted in 1977 for similar reasons. The river portion of Sector IV (the Detroit River fishery) is geographically distinct from the Western Basin fishery and was surveyed and described in a separate report in 1978, 1979 and 1980.

Sector I included waters around the islands to the west of Pelee Island (East Sister, North Harbour, Hen and Chicken Islands). Sector II included the waters around Pelee Island. A description of the boundaries of the two sectors follows:

Sector I	(north)	upbound shipping lane
	(east)	longitude 82°44'W
	(south)	international border
	(west)	international border
Sector II	(north)	upbound shipping lane
	(east)	longitude 82°30'W
	(south)	international border
	(west)	longitude 82°44'W

Sectors were subdivided into areas (Figure I). Sector I was divided into two areas by a line originating from the intersection of longitude 82°44'W with the upbound shipping lane and proceeding at 223° (magnetic) to the international border. Area 1 was northwest of this line and Area 2 was southeast of this line.

Sector II was divided into five areas by boundary lines connecting locations on Pelee Island and specified points on the boundaries of Sector II. The southern boundary of Area 1 was represented by a line connecting the southern tip of Fish Point to the intersection of longitude 82°44'W with the international boundary. The line dividing Areas 1 and 2 extended north from Lighthouse Point to its intersection with the upbound shipping lane. The division of Areas 2 and 3 was described by a line connecting Middle Point to the intersection of longitude 82°30'W with the upbound shipping lane. Areas 3 and 4 were separated by a line connecting Mill Point with a buoy located on the international border at longitude 82°35'W. Areas 4 and 5 were divided by a line connecting Fish Point and the buoy at longitude 82°35' W on the international border.

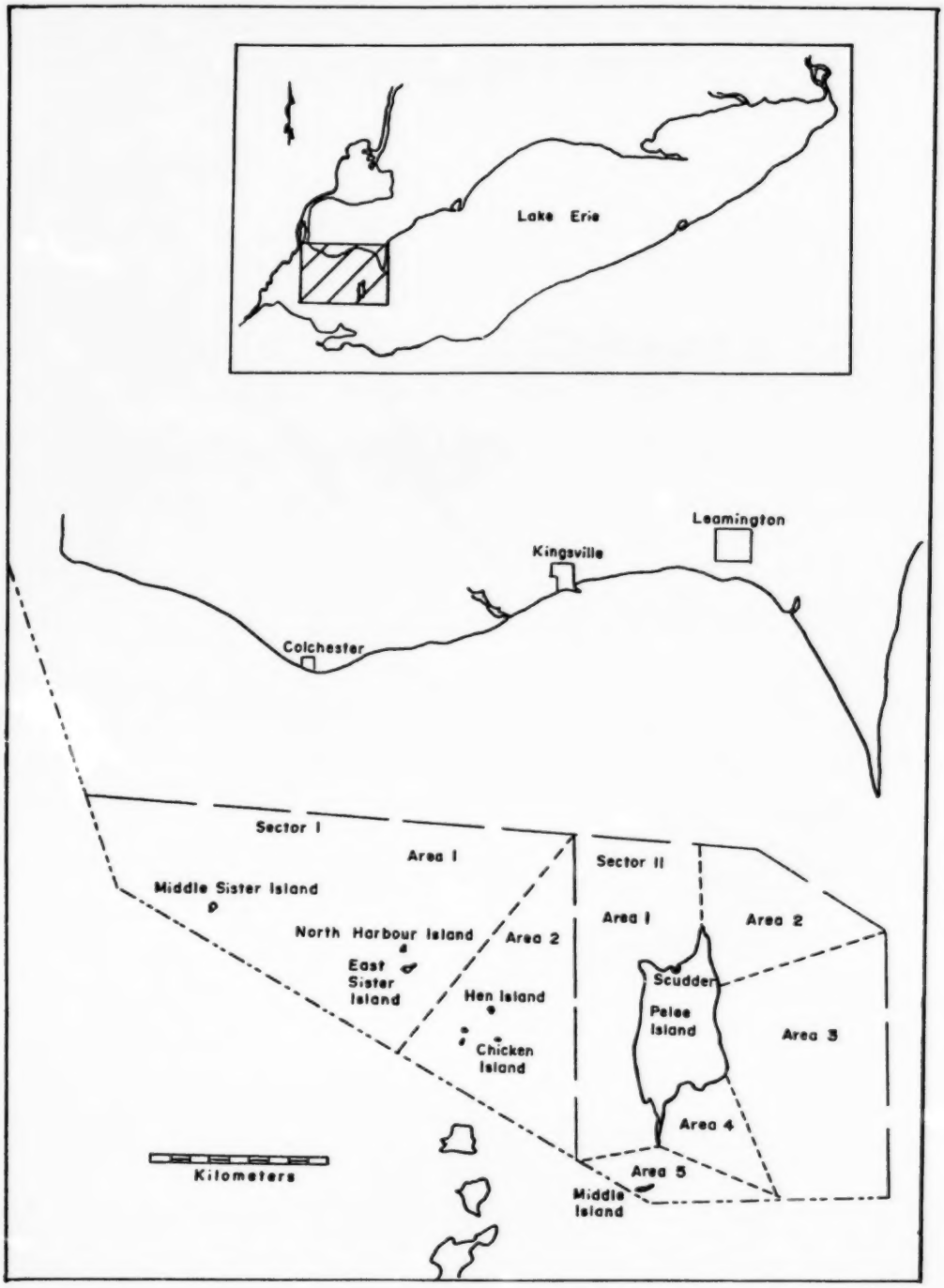

Figure 1. The study area.

METHODS

Crew and Equipment

The creel census was done from Scudder, Pelee Island by the owner-operator of a chartered boat and a census clerk. They used a 7.6-m fiberglass deep-V hull boat powered by a 149 kW engine. A boat of this size was considered necessary to do an efficient survey of the study area. This boat was as capable in reaching the fishing areas as most sport fishing boats.

Sampling equipment included a metric measuring board, thermometer, forceps, knife and water tight containers containing: maps, field forms (Appendix I), scale envelopes, fish identification guide and Ontario Fishing Regulation pamphlets.

Schedule

The 1984 creel census schedule is outlined in Table 1. Duckworth and Paine (1975) found that a minimal amount of angling was done in the study area during June and September. The survey was scheduled between July 1 and August 31. Alternate sets of weekdays, Monday to Friday inclusive, and all weekend days were scheduled for sampling. Canadian statutory holidays, i.e., Monday, July 2 and Monday, August 6, were classified as weekdays. The United States holiday, Wednesday, July 4, was classified as a weekend day. Four weekend days and five weekdays were scheduled for sampling in each 14-day period and five consecutive weekdays in each two-week period were not scheduled to be censused. The criteria considered to establish strata within each month

(July and August) were sector, area, day-type and census-period. Areas were not considered independently in scheduling, as sampling in a sector assumed that all areas within that sector would be sampled in a designated period. Sampling patterns were applied systematically to weekdays independently from weekend days. The following pattern was applied to designate the sector to be censused on weekdays:

August 13	Monday	Sector I
August 14	Tuesday	Sector II
August 15	Wednesday	Sector I
August 16	Thursday	Sector II
August 17	Friday	Sector I
August 27	Monday	Sector II
August 28	Tuesday	Sector I
August 29	Wednesday	Sector II
August 30	Thursday	Sector I
August 31	Friday	Sector II

This pattern was continued in scheduling all remaining weekdays. On weekends, the following pattern was followed:

July 1	Sunday	Sector II
July 7	Saturday	Sector II
July 8	Sunday	Sector I
July 14	Saturday	Sector I

This pattern was continued in scheduling all remaining weekend days.

Census-period (AM or PM) was assigned to weekdays independently of weekend days and Saturdays and Sundays were

treated independently when assigning census-periods on weekend days.

On weekdays, the following pattern was applied to designate the time-period to be censused:

August 13 Sector I AM
August 14 Sector II AM
August 15 Sector I PM
August 16 Sector II PM
August 17 Sector I AM

August 27 Sector II AM
August 28 Sector I PM
August 29 Sector II PM
August 30 Sector I AM
August 31 Sector II AM

Weekend days were assigned census-periods according to the following pattern:

August 4 Saturday Sector II AM
August 11 Saturday Sector I AM
August 18 Saturday Sector II PM
August 25 Saturday Sector I PM

August 5 Sunday Sector I PM
August 12 Sunday Sector II AM
August 19 Sunday Sector I AM
August 26 Sunday Sectot II PM

A mechanical breakdown forced cancellation of a scheduled morning census on Sunday, July 15. The census for Sunday, July

29, which was originally scheduled for Sector II in the afternoon was changed to a morning census. This change ensured the minimum two censuses of a stratum required to calculate the standard error. Three scheduled weekdays, July 16-18, were also missed because of the breakdown and were re-scheduled for July 23-25, which normally would have been days not censused.

Census Procedures

Boat counts were made to determine the mean number of boats present within specific strata. Boat count data and interview information were used to estimate angling effort and harvest in the various strata. The census crew was expected to make two boat counts in each area during one sampling period unless prevented from doing so by weather conditions or mechanical failures. The timing of boat counts within a census-period was not predetermined but was varied to limit sampling bias. Only boats with lines in the water were counted. After the boat counts were completed, usually within an hour, anglers were approached and interviewed.

Estimates of effort were based on partial censuses as well as completed censuses. When surveys were interrupted by poor weather, zero boat counts were assumed for the curtailed portion of the sampling period.

The sampling procedure did not predetermine the number of interviews to be made during a sampling period. The census crew collected catch, effort and angling residency information during the interview. After the boat count and scale sampling requirements were met, the survey crew attempted to interview

as many angling parties as possible sampling every i'th boat (i equals frequency factor exceeding time allotment, i.e., 2X, 3X, 4X, etc.) when more boats were present than could be interviewed.

Representative scale samples and length measurements were non-selectively taken from harvested walleye and smallmouth bass. At least 50 walleye and 25 smallmouth bass were to be sampled from each sector each month. The decision to sample a party's fish was made before approaching the party and all walleye and/or smallmouth bass were sampled from the cooperating party to avoid bias.

Results of previous surveys indicate that most angling was done between 0800 and 2000 h so morning and afternoon periods were defined as six-hour periods, i.e., from 0800 to 1400 h and from 1400 to 2000 h, for data analysis purposes (Paine and Witherspoon 1977; Hector 1978; Sztramko 1979, 1980; Witzel 1981; Hyatt 1982, 1983, 1984). However, practical considerations, i.e., the eight-hour work day and travel time and the fact that previous surveys indicated censusing between 0800 and 0900 h provided little useful data (Hector 1978), restricted the census to five-hour periods.

Data Analysis

Census data were analysed using a computer program developed by the Lake Erie Fisheries Assessment Unit (Petzold 1980). Estimates of effort, catch and harvest were derived from observed values of same (based on six-hour morning and afternoon fishing periods). Daily estimates were summarized and presented as stratum estimates (Appendix II).

The analysis included scheduled sampling days in which

reduced effort was exerted because of bad weather. A second boat count during a census-period provided an estimate of variation in effort especially when adverse weather interfered with a scheduled census.

Effort was reported in rod-hours and in angler-hours; however, the measure of rod-hours was used to derive catch and harvest estimates as it reflects the time actively spent fishing and the number of rods used. Sztramko and Paine (1984) explain that "during the 1974-80 period, angler-hours, which may have been more appropriately termed "user-hours", was used as a measure of participation in a fishery. Angler-hours was derived from the time which a fishing party actively fished and the number of persons in the fishing party, regardless of whether all individuals in the party fished."

Catch per unit of effort (CUE) for a stratum was calculated by dividing the actual total number of a species caught by the actual total number of rod-hours expended by all anglers in capturing these fish (Appendix II). This, the unweighted CUE, was used in this report as a measure of relative abundance and is used to interpret the distribution of catch and effort in the fishery.

RESULTS AND DISCUSSION

From July 1 to August 31, 1984, 498 boat interviews with angling parties were conducted. A summary of selected information gathered from angler interviews and boat counts is contained in Appendix IV.

Distribution of Angling Effort

Anglers expended an estimated 81,446 ±22,978 (95% C.I.) rod-hours in the study area in July and August of 1984 (Table 2). Total effort was divided equally between July and August and Sector II received more of the total effort (85%) than did Sector I (15%).

Distribution of angling effort by area and month is shown in Table 3 with Area 1 Sector II receiving the most pressure during the study period.

An estimated 45,611 rod-hours were expended by weekday anglers and 35,835 rod-hours by weekend day anglers (Table 4). Each sector received a mean angling effort of 259 rod-hours during a weekday six-hour fishing period and 498 rod-hours during a weekend day six-hour fishing period (Table 5).

Morning angling was more popular on weekdays (40% of total) but afternoon angling was more popular on weekend days (29% of total)(Table 4).

Angling effort increased from 1975 to 1978 (Table 6) then stabilized at lesser levels since then. The 1984 estimated effort of 81,446 rod-hours is a 30% decrease from the 1983 estimated effort of 116,649 rod-hours.

Catch and Harvest

An estimated 126,134 fish were caught in the study area of

which 47,125 (37%) were harvested (Table 7). The species contributing most numbers to the total catch were: walleye (54%), freshwater drum (29%), channel catfish (7%) and smallmouth bass (6%). Anglers kept 57% of the captured walleye which represented 82% of the total harvest in numbers. The smallmouth bass harvest contributed 13% of the total harvest in numbers which is a substantial decrease from the 1983 contribution of 24% (Hyatt 1984). Contribution to the catch and harvest by other species is also presented in Table 7.

Percentage of anglers seeking a particular species (species anglers) was: walleye (94%), smallmouth bass (24%) and channel catfish (9%)(Table 8). Angler preference for other species is also presented in Table 8.

The walleye, channel catfish and yellow perch estimated catches in 1984 were higher than in 1983 whereas the white bass, smallmouth bass and white perch catches were lower (Table 9).

Walleye Fishery

Effort

Anglers expressing a preference for walleye expended 96% of the total rod-hours spent in the census area (Table 10).

Catch Per Unit of Effort

Walleye anglers caught an estimated 0.636 walleye per rod-hour of angling in the study area in July and August, 1984 (Table 11). The best angling success rate occurred in Sector II during July (1.051 walleye per rod-hour) and the poorest was in Sector I during August (0.450 walleye per rod-hour). The CUE for the whole study area was better in July (0.845)

than in August (0.485). Over the season, the walleye angling success rate was better in Sector II (0.714) than in Sector I (0.463).

The CUE for walleye anglers in July and August in each of Sectors I and II is shown in Table 12. The highest success rate (CUE) occurred in Area 4 of Sector II in July (1.954 walleye per rod-hour).

Since 1976, the CUE has usually been higher in July than in August and the CUE in Sector II has usually been higher than in Sector I (Table 13). The CUE by walleye anglers in 1984 conforms to this pattern.

The CUE of walleye by walleye anglers was first calculated using observed catches and observed effort in 1978 (Table 18). The CUE for walleye anglers increased from 1978 to 1979 then decreased each year since from 0.886 walleye per rod-hour in 1979 to 0.396 in 1983; however, the CUE in 1984 was higher at 0.636 walleye per rod-hour.

Catch and Harvest

An estimated 68,314 ±28,007 (95% C.I.) walleye were caught in the study area in 1984 (Table 7). Of these, 38,704 (57% of the catch) or 27,712 kg were harvested (Table 20).

Of the total estimated walleye catch, 92% was taken in Sector II (Table 14). More walleye were taken in July (58%) than in August (42%). The highest portion (49%) of the total walleye catch came from Area 1 Sector II (Table 15) and the second highest portion (19%) came from Area 4 Sector II.

Walleye anglers caught more walleye through the week than on weekends (Table 16) although more effort (87%) was expended on an average weekend day than on an average weekday. Catch

and harvest were higher on an average weekend day (94% and 70% higher respectively) than on an average weekday but the CUE was higher on weekdays.

Walleye catches by walleye anglers were higher in the afternoon (PM) census-period in Sector I than in the morning (AM) period in Sector II (Table 17). The CUE was higher in the morning period (AM) than in the afternoon period (PM) in both Sectors I and II.

Walleye catches increased each year from an estimated 7,707 in 1975 to 121,441 in 1978 then declined to 47,919 in 1983 (Table 18). The 1984 estimated catch of 68,314 represents a 43% increase from 1983, and was made with 30% less effort. However, the 1984 harvest of 38,704 walleye is still lower than the 1983 harvest.

Age Composition

Two-year-old walleye contributed the most numbers to the angler harvest in seven of the past ten years (1975-1984) (Figure 2). Two-year-olds contributed 58% by number and 31% by weight to the 1984 angler harvest (Table 20). Mean length and weight of age-groups of harvested walleye are presented in Table 19. The mean total length and total weight of harvested walleye (all age-groups) was 415 mm and 716 g respectively.

Smallmouth Bass Fishery

Effort

Anglers who expressed a preference for smallmouth bass expended 28% of the total rod-hours spent in the Western Basin (Table 10).

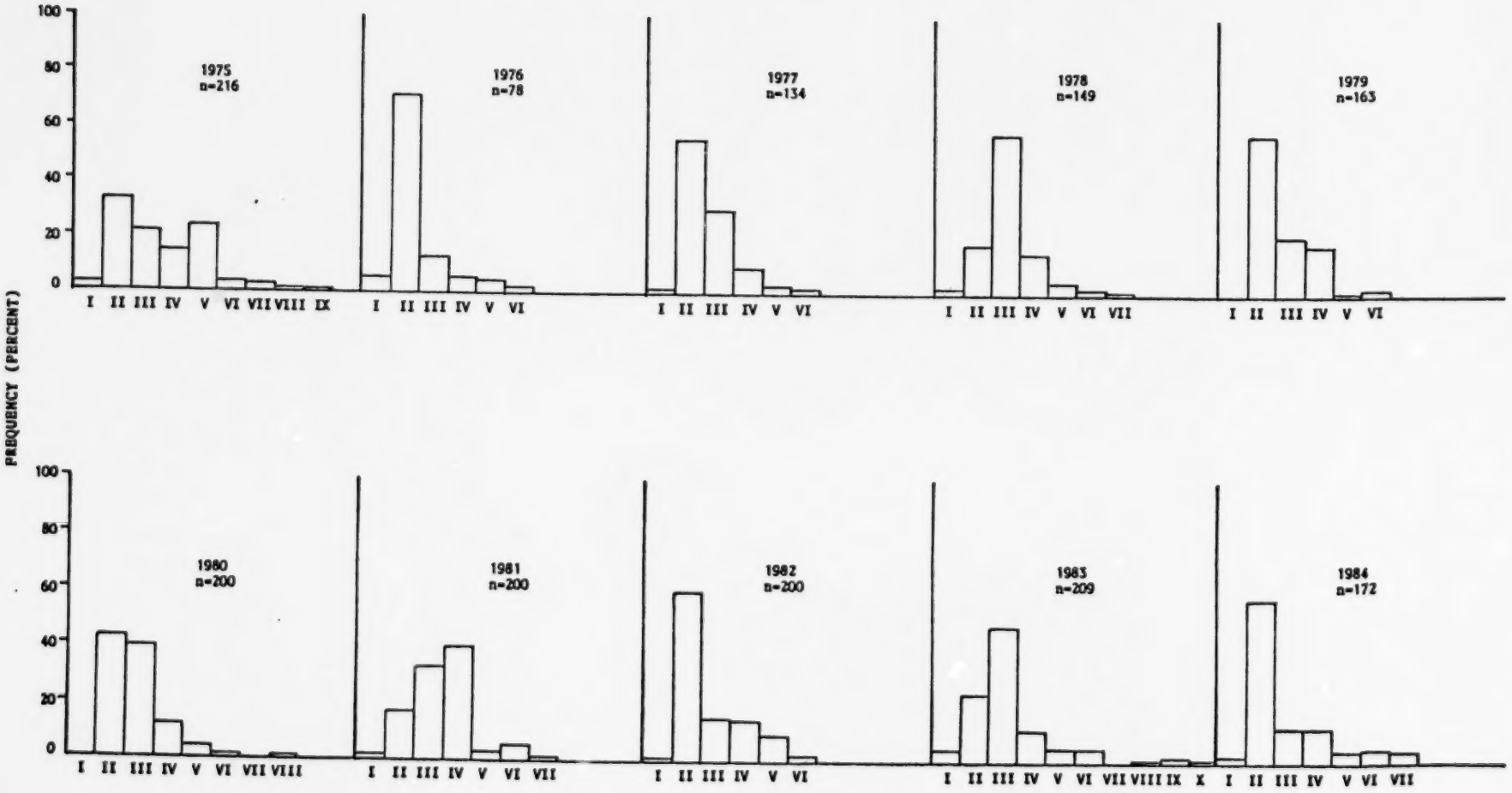

Figure 2. Age frequency histograms for angler harvested walleye in the Western Basin, Lake Erie, 1975-1984.

Catch Per Unit of Effort

Smallmouth bass anglers caught an estimated 0.282 smallmouth bass per rod-hour of angling in the study area in July and August (Table 21). Smallmouth bass anglers enjoyed the highest success rate (0.371 smallmouth bass per rod-hour) in Sector I during August and the lowest was in Sector I during July (0.192 smallmouth bass per rod-hour). The CUE for August (0.297) was better than for July (0.248) throughout the study area and the CUE was higher in Sector I (0.315) than in Sector II (0.267) for the study period.

The CUE for smallmouth bass anglers in July and August in each area of Sector I and II is shown in Table 22. The highest success rate occurred in Area 4 of Sector II in August (2.125) and the lowest in Area 2 of Sector I in July (0.160).

Catch and Harvest

An estimated 8,072 ±2971 (95% C.I.) smallmouth bass were angled from the study area in 1984 (Table 7). Of these, 5,912 (73% of the catch) or 4,333 kg (Table 27) were harvested.

Of the total estimated smallmouth bass catch, 85% was taken in Sector II (Table 23) and 52% was taken in July.

In the 1984 season, the smallmouth bass catch was highest in Areas 1, 3 and 4 of Sector II (27%, 27% and 21% of smallmouth bass catch respectively)(Table 24).

Catch and harvest were higher on the average weekend day than on the average weekday (49% and 42% higher respectively) but the CUE was higher on weekdays (Table 25).

Smallmouth bass catches and CUE were higher in the afternoon (PM) period in Sector I and in the morning (AM) period in Sector II (Table 26). The highest success rate

occurred in Sector I during the afternoon (PM) period (0.355 smallmouth bass per rod-hour) and the poorest rate was in Sector I during the morning (AM) period (0.186 smallmouth bass per rod-hour).

Total angling effort by all anglers decreased 30% from 1983 to 1984 (Table 6) and the smallmouth bass catch by all anglers decreased 61% (Table 9).

Age Composition

In 1984, three-year-old smallmouth bass made up 43% by number of the harvest (Table 27; Figure 3), with two-, four-, five- and six-year-olds contributing 6%, 29%, 11% and 11% respectively.

Mean length and weight of age-groups of harvested smallmouth bass are presented in Table 28. The average total length and total weight of harvested smallmouth bass (all age-groups) was 352 mm and 733 g respectively.

Residency Status

Non-residents of Ontario constituted 91% of interviewed anglers in 1984 (Table 29) compared with 89% in 1983. In Sector I for the season, 100% were non-residents and in Sector II, 88% were non-residents. In July, 86% of the anglers interviewed were non-residents and 96% of those interviewed in August were non-residents.

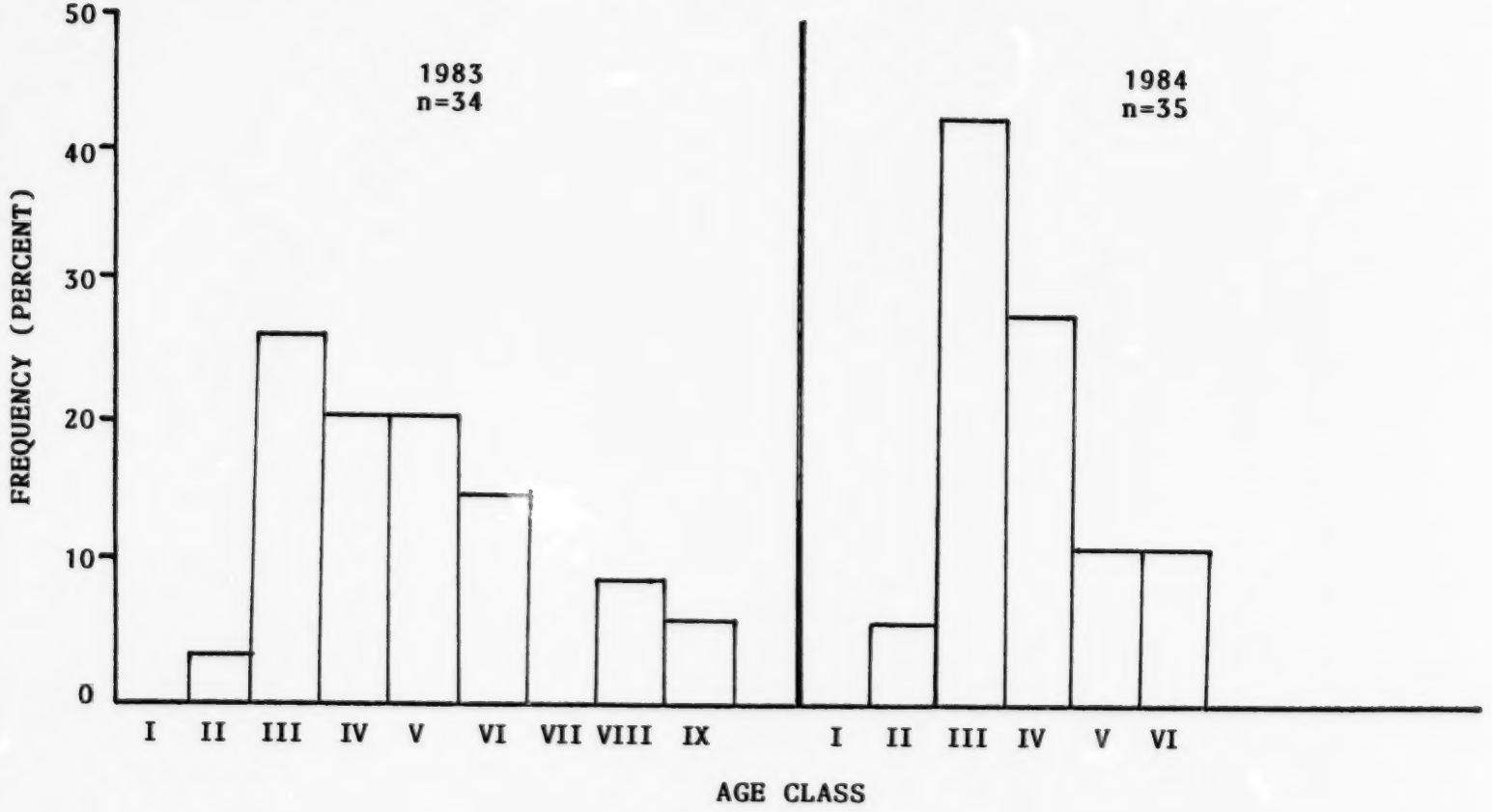

Figure 3. Age frequency histogram for angler harvested smallmouth bass in the Western Basin, Lake Erie, 1983-1984.

SUMMARY

1. The survey crew conducted 498 boat interviews with angling parties during the 1984 summer creel census (July 1 - August 31) in Sectors I and II of Lake Erie's Western Basin.
2. Anglers exerted an estimated 81,446 ±22,978 (95% C.I.) rod-hours of effort in Sectors I and II of the Western Basin in 1984.
3. Anglers divided their effort equally between July and August. The 1984 estimated total effort is a 30% decrease from the 1983 estimated total effort.
4. The estimated total catch of all species in 1984 was 126,134 fish of which 37% were harvested.
5. An estimated 68,314 ±28,007 (95% C.I.) walleye were caught in Sectors I and II of the Western Basin in 1984. Anglers kept 57% (38,704) of the captured walleye; the harvested walleye weighed an estimated 27,712 kg.
6. The percent contribution to the total estimated catch and harvest by number of angled fish species were: walleye (54% and 82% respectively), freshwater drum (29% and <1%), channel catfish (7% and 3%), smallmouth bass (6% and 13%), white perch (2% and <1%), white bass and yellow perch (each 1% and 1%), rock bass (<1% and <1%) and carp (<1% and 0).
7. Walleye were sought by 94% of the angling parties interviewed and they expended 96% of the total effort spent in the study area.
8. Anglers expressing a preference for walleye (walleye anglers) captured an estimated 0.636 walleye per rod-hour.

The best success rate occurred in Sector II in July (1.051 walleye per rod-hour) and the poorest was in Sector I in August (0.450 walleye per rod-hour).

9. The catch per unit of effort for walleye anglers increased from 1978 to 1979 (0.758 to 0.886) but decreased each year to 1983 (0.396). The CUE was higher in 1984 (0.636).
10. The 1984 walleye harvest was dominated by two-year-old fish (58% by numbers) with three- and four-year-olds contributing 13% each by numbers. The average total length and weight of harvested walleye was 415 mm and 716 g.
11. An estimated 8,072 ±2,971 (95% C.I.) smallmouth bass were caught in Sectors I and II of the Western Basin in 1984. Anglers kept 73% of the captured bass. The harvested bass weighed an estimated 4,333 kg.
12. Smallmouth bass were sought by 24% of the angling parties interviewed and these anglers expended 28% of the total effort.
13. Smallmouth bass anglers captured an estimated 0.282 smallmouth bass per rod-hour in the study area in 1984. The best success rate occurred in Sector I during August (0.371 smallmouth bass per rod-hour) and the poorest was in Sector I during July (0.192 per rod-hour).
14. The 1984 smallmouth bass harvest was dominated by three-year-old fish (43% by number) with two-, four-, five- and six-year-olds contributing 6%, 29%, 11% and 11% by number respectively. The mean total length and total weight of harvested smallmouth bass was 352 mm and 733 g.
15. Non-residents of Ontario represented 91% of the angling parties interviewed during the survey.

ACKNOWLEDGEMENTS

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REFERENCES

Duckworth, G.A., and J.R. Paine. 1975. Summer creel census in the Canadian waters of the Western Basin of Lake Erie, 1975. Lake Erie Fisheries Assessment Unit Report 1975-1. Ontario Ministry of Natural Resources, London, Ontario. 69 pp.

Hector, D.G. 1978. Summer creel census in the Canadian waters of the Western Basin of Lake Erie, 1977. Lake Erie Fisheries Assessment Unit Report 1978-2. Ontario Ministry of Natural Resources, London, Ontario. 105 pp.

Hyatt, R.A. 1982. Summer creel census in the Canadian waters of the Western Basin of Lake Erie, 1981. Lake Erie Fisheries Assessment Unit Report 1982-1. Ontario Ministry of Natural Resources, Wheatley, Ontario. 53 pp.

Hyatt, R.A. 1983. Summer creel census in the Canadian waters of the Western Basin of Lake Erie, 1982. Lake Erie Fisheries Assessment Unit Report 1983-1. Ontario Ministry of Natural Resources, Wheatley, Ontario. 54 pp.

Hyatt, R.A. 1984. Summer creel census in the Canadian waters of the Western Basin of Lake Erie, 1983. Lake Erie Fisheries Assessment Unit Report 1984-1. Ontario Ministry of Natural Resources, Wheatley, Ontario. 66 pp.

Paine, J.R. and N.B. Witherspoon. 1977. Summer creel census in the Canadian waters of the Western Basin of Lake Erie, 1976. Ontario Ministry of Natural Resources, London, Ontario. 71 pp.

Petzold, M. 1980. APL Programs for creel survey data. Lake Erie Fisheries Assessment Unit Report 1980-4. Ontario Ministry of Natural Resources, London, Ontario. 49 pp.

Robins, C.R., R.M. Bailey, C.E. Bond, J.R. Brooker, E.A. Lachner, R.N. Lea, and W.B. Scott. 1980. A list of common and scientific names of fishes from the United States and Canada. American Fisheries Society Special Publication No. 12 (Fourth Edition) Bethesda, Maryland. 174 pp.

Sztramko, L. 1979. Summer creel census in the Canadian waters of the Western Basin of Lake Erie, 1978. Lake Erie Fisheries Assessment Unit Report 1979-1. Ontario Ministry of Natural Resources, London, Ontario. 49 pp.

Sztramko, L. 1980. Summer creel census in the Canadian waters of the Western Basin of Lake Erie, 1979. Lake Erie Fisheries Assessment Unit Report 1980-1. Ontario Ministry of Natural Resources, London, Ontario. 54 pp.

Sztramko, L.K., and J.R. Paine. 1984. Sport fisheries in the Canadian portion of Lake Erie and connecting waters, 1948-80. Ont. Fish. Tech. Rep. Ser. No. 13:iii & 43 p.

Witzel, L. 1981. Summer creel census in the Canadian waters of the Western Basin of Lake Erie, 1980. Lake Erie Fisheries Assessment Unit Report 1981-1. Ontario Ministry of Natural Resources, London, Ontario. 60 pp.

Table 1. Creel census schedule in the Western Basin of Lake Erie, 1984.[a]

Date	Sector I	Sector II	Date	Sector I	Sector II
July 1		PE	August 1		AD
July 2		AD	August 2	PD	
July 3	PD		August 3		PD
July 4		PE	August 4		AE
July 5	AD		August 5	PE	
July 6		AD	August 6-10	OFF	
July 7		AE	August 11	AE	
July 8	PE		August 12		AE
July 9-13	OFF		August 13	AD	
July 14	AE		August 14		AD
July 15-18	OFF		August 15	PD	
July 19		AD	August 16		PD
July 20	PD		August 17	AD	
July 21		PE	August 18		PE
July 22	AE		August 19	AE	
July 23	PD		August 20-24	OFF	
July 24		PD	August 25	PE	
July 25	AD		August 26		PE
July 26-27	OFF		August 27		AD
July 28	PE		August 28	PD	
July 29		AE	August 29		PD
July 30		PD	August 30	AD	
July 31	AD		August 31		AD

[a] Census-periods and day-types were classified as follows: A=AM, P=PM, D=weekday and E=weekend day.

Table 2. Distribution of angling effort by sector and month in the Western Basin, Lake Erie, 1984.

Month	Effort[a]	Sector I	Sector II	Total	Percent of total
July	R	6,676	34,088	40,764	50
	A	6,743	34,411	41,154	
August	R	5,274	35,408	40,682	50
	A	5,332	35,677	41,009	
Total	R	11,950	69,496	81,446	100
	A	12,074	70,088	82,163	
Percent of total	R	15	85		100

[a] 'R' is the estimated rod-hours.
'A' is the estimated angler-hours

Table 3. Distribution of angling effort by sector, area and month in the Western Basin, Lake Erie, 1984.[a]

Month	Sector	Area 1	2	3	4	5	Total
July	I	2,304	4,372	-	-	-	6,676
	II	9,458	6,235	10,050	8,345	0	34,088
August	I	2,241	3,033	-	-	-	5,274
	II	29,759	1,397	3,803	365	84	35,408
Total	I	4,545	7,405	-	-	-	11,950
	II	39,218	7,632	13,853	8,710	84	69,496

[a] Effort estimated in rod-hours.

Table 4. Distribution of angling effort by sector, day-type, census-period and month in the Western Basin, Lake Erie, 1984.[a]

Month	Sector	Day-type: Weekday, Census-period: AM	Day-type: Weekday, Census-period: PM	Day-type: Weekend, Census-period: AM	Day-type: Weekend, Census-period: PM
July	I	2,128	1,155	1,186	2,207
	II	14,258	6,991	4,766	8,073
August	I	1,291	1,388	0	2,595
	II	15,236	3,164	6,514	10,494
Study period	Study area	32,914	12,697	12,467	23,368
Percent of total		40	16	15	29
(AM + PM)[b]		45,611		35,835	
Percent of (AM + PM)		56		44	

[a] Effort estimated in rod-hours.

[b] Represents the total effort expended on weekdays or on weekends regardless of census-period.

Table 5. Distribution of mean angling effort by sector, day-type, census-period and month in the Western Basin, Lake Erie, 1984.[a]

Month	Sector	Day-type: Weekday, Census-period: AM	Day-type: Weekday, Census-period: PM	Day-type: Weekend day, Census-period: AM	Day-type: Weekend day, Census-period: PM
July	I	101	55	119	221
	II	679	333	477	807
August	I	56	60	0	324
	II	662	138	814	1,312
Study period	I	78	58	66	267
	II	670	231	627	1,031
Study period	Study area	374	144	346	649
Study period, study area and census-period		259[b]		498[b]	
Study period, study area, census-period and day-type		328[c]			

[a] Effort was estimated in rod-hours and was based on a six-hour fishing period.

[b] Represents the mean angling effort expended during a weekday or weekend day six-hour fishing period regardless of census-period, sector or month.

[c] Represents the mean angling effort expended during a six-hour fishing period regardless of census-period, day-type, sector or month.

Table 6. Distribution of angling effort in the Western Basin, Lake Erie, 1975-1984.[a]

Month	Sector	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984
July	I	16,350	31,251	28,487	32,087	7,794	11,131	25,700	22,095	22,659	6,676
	II	6,957	23,475	27,828	38,542	26,642	42,354	41,995	28,422	12,838	34,088
August	I	8,805	17,603	41,916	41,773	17,177	10,582	19,564	24,672	38,938	5,274
	II	13,734	24,847	27,948	33,696	43,942	27,170	49,140	31,378	42,214	35,408
Study period	I	25,155	48,854	70,403	73,860	24,971	21,713	45,264	46,767	61,597	11,950
	II	20,691	48,322	55,776	72,238	70,584	69,524	91,134	59,800	55,052	69,496
Study period	Study area	45,846	97,176	126,179	146,098	95,555	91,237	136,398	106,566	116,649	81,446

[a] Effort was estimated in rod-hours.

Table 7. Catch and harvest estimates (in number) of the sport fishery in the Western Basin of Lake Erie, 1984.

Species	Sector I Catch	Sector I Harvest	Sector II Catch	Sector II Harvest	Total catch	Total harvest	% Total catch	% Total harvest
Walleye	5,757	4,426	62,557	34,278	68,314	38,704	54	82
Freshwater drum	5,700	5	30,570	46	36,270	51	29	<1
Channel catfish	642	207	7,664	1,382	8,306	1,589	7	3
Smallmouth bass	1,245	808	6,826	5,104	8,072	5,912	6	13
White perch	220	34	2,015	166	2,236	200	2	<1
White bass	91	0	1,521	278	1,611	278	1	1
Yellow perch	696	143	243	96	940	239	1	1
Rock bass	245	152	122	0	367	152	<1	<1
Carp	0	0	18	0	18	0	<1	0
Total	14,596	5,775	111,536	41,350	126,134	47,125	100	100

Table 8. Percentage of anglers seeking particular species in the Western Basin, Lake Erie, 1984.[a]

Month	Sector	Species sought								
		Walleye	Smallmouth bass	Channel catfish	White perch	Yellow perch	White bass	Rock bass	Freshwater drum	Bluegill
July	I	97	19	8	4	0	0	1	0	0
	II	99	20	10	3	0	1	0	0	0
August	I	89	32	5	2	5	0	5	0	0
	II	90	28	9	2	4	1	0	1	1
Study period	Study area	94	24	9	2	2	1	1	<1	<1

[a] Angler preference was expressed as a percentage of species anglers over all anglers. In some cases anglers sought more than one species, while in others no preference was indicated.

Table 9. Estimated catch (in number) of walleye and other species from the Western Basin, Lake Erie, sport fishery during July and August, 1975-84.

Sector	Year	Walleye	White bass	Freshwater drum	Smallmouth bass	Yellow perch	Channel catfish	White perch
I	1975[a]	4,778	2,549	14,194	1,996	258	-	0
	1976	23,619	1,154	20,052	1,438	1,508	1,238	0
	1977	40,283	170	35,263	1,664	2,784	941	0
	1978	48,320	694	49,405	5,243	3,830	3,092	0
	1979	18,048	1,008	14,460	1,587	899	1,024	0
	1980	15,254	37	15,059	1,890	984	1,088	0
	1981	21,981	1,025	23,005	1,941	1,235	2,556	172
	1982	20,795	1,287	23,279	1,852	1,247	2,777	618
	1983	26,060	1,651	17,770	6,268	81	1,139	1,991
	1984	5,757	91	5,700	1,245	696	642	220
II	1975[a]	2,929	5,947	3,901	2,705	1,760	-	0
	1976	26,790	731	25,146	1,332	3,721	3,555	0
	1977	30,278	367	38,928	1,429	3,743	1,381	0
	1978	73,121	1,204	48,393	2,385	7,215	5,470	0
	1979	70,597	2,442	58,234	2,663	4,780	5,208	0
	1980	43,319	1,176	61,846	2,942	7,644	9,707	0
	1981	50,486	640	35,675	4,266	3,534	5,843	0
	1982	29,737	2,180	38,462	6,103	3,151	5,599	1,980
	1983	21,859	1,664	20,463	14,517	108	1,067	2,397
	1984	62,557	1,521	30,570	6,826	243	7,664	2,015
Study area	1975[a]	7,707	8,496	18,095	4,701	2,018	-	0
	1976	50,409	1,885	45,198	2,770	5,229	4,793	0
	1977	70,561	537	74,191	3,093	6,527	2,322	0
	1978	121,441	1,898	97,798	7,628	11,045	8,562	0
	1979	88,645	3,450	72,694	4,250	5,679	6,232	0
	1980	58,573	1,213	76,905	4,832	8,628	10,795	0
	1981	72,467	1,666	58,680	6,206	4,770	8,400	172
	1982	50,532	3,467	61,741	7,955	4,398	8,376	2,598
	1983	47,919	3,315	38,233	20,784	190	2,206	4,388
	1984	68,314	1,611	36,270	8,072	940	8,306	2,236

[a] The catch of species other than walleye was taken between June 17 and September 30, 1975.

Table 10. Effort by species anglers expressed as a percentage of total angling effort (rod-hours) in the Western Basin, Lake Erie, 1984.[a]

Month	Sector	Species sought								
		Walleye	Smallmouth bass	Yellow perch	Channel catfish	White bass	White perch	Freshwater drum	Bluegill	Rock bass
July	I	95	22	0	10	0	3	0	0	1
	II	100	22	0	9	1	2	0	0	0
August	I	87	36	7	6	0	1	0	0	6
	II	93	33	3	11	<1	1	<1	1	0
Study period	Study area	96	28	2	10	<1	1	<1	<1	1

[a] Some anglers sought more than one species while others indicated no preference.

Table 11. Catch per unit of effort (CUE) for walleye caught by sector and month in the Western Basin, Lake Erie, 1984.[a]

Month	Sector	Walleye anglers	All anglers
July	I	0.477	0.463
	II	1.051	1.050
	Study area	0.845	0.836
August	I	0.450	0.380
	II	0.498	0.456
	Study area	0.485	0.433
Study period	I	0.463	0.417
	II	0.714	0.676
Study period	Study area	0.636	0.592

[a] CUE represents the observed number of fish caught divided by the observed effort in rod-hours both for walleye anglers and all anglers.

Table 12. Catch per unit of effort (CUE) for walleye caught by sector, area and month[a] in the Western Basin, Lake Erie, 1984.

Month	Sector	Area				
		1	2	3	4	5
July	I	0.490	0.468			
	II	0.851	0.828	1.135	1.954	-[b]
August	I	0.364	0.535			
	II	0.610	0.308	0.313	0.276	-[b]

[a] CUE represents the observed number of fish caught by walleye anglers divided by the corresponding observed effort in rod-hours.

[b] No walleye anglers were interviewed in this area.

Table 13. Catch per unit of effort (CUE) for walleye caught by sector and month in the Western Basin, Lake Erie, 1975-84.[a]

Month	Year	Sector I	Sector II
July	1975	0.148	0.130
	1976	0.648	0.794
	1977	0.549	0.771
	1978	0.871	1.107
	1979	0.885	1.407
	1980	0.605	0.588
	1981	0.470	0.602
	1982	0.501	0.731
	1983	0.360	0.391
	1984	0.477	1.051
August	1975	0.313	0.172
	1976	0.224	0.347
	1977	0.493	0.321
	1978	0.425	0.561
	1979	0.532	0.729
	1980	0.628	0.813
	1981	0.425	0.577
	1982	0.368	0.404
	1983	0.407	0.410
	1984	0.450	0.498

[a] CUE represents the observed number of fish caught by walleye anglers divided by the corresponding observed effort in rod-hours.

Table 14. Distribution of the walleye catch by sector and month in the Western Basin, Lake Erie, 1984.

Month	Sector	Estimated catch (number)	Percent of total catch
July	I	3,100	5
	II	36,433	53
August	I	2,657	4
	II	26,125	38
Study period	I	5,757	8
	II	62,557	92
Study period	Study area	68,314	100

Table 15. Distribution of the walleye catch and harvest by sector, area and month in the Western Basin, Lake Erie, 1984.

Month	Sector	Area	Estimated catch (number)	Percent of total catch	Estimated harvest (number)	Percent kept
July	I	1	1,030	2	731	71
		2	2,069	3	1,632	79
	II	1	8,724	13	6,001	69
		2	4,861	7	3,098	64
		3	9,872	14	3,178	32
		4	12,975	19	3,558	27
		5	-[a]		-[a]	
	Study area		39,532	58	18,197	46
August	I	1	725	1	530	73
		2	1,932	3	1,533	79
	II	1	24,942	37	17,471	70
		2	334	<1	269	81
		3	710	1	566	80
		4	138	<1	138	100
		5	0	0	0	
	Study area		28,782	42	20,507	71
Study period	Study area		68,314	100	38,704	57

[a] Angling parties weren't present within this area during interview periods.

Table 16. Distribution of catch and effort statistics for walleye anglers by day-type in the Western Basin, Lake Erie, 1984.

Sector	Statistic	Day-type: Weekday	Mean[d]	Weekend day	Mean[d]
I	Rod-hours[a]	5,322	121	5,635	313
	Catch[b]	3,826	87	2,090	116
	Harvest[b]	2,923	66	1,618	90
	CUE[c]	0.673		0.349	
II	Rod-hours[a]	38,825	882	28,068	1,559
	Catch[b]	34,278	779	28,084	1,560
	Harvest[b]	19,859	451	14,274	793
	CUE[c]	0.679		0.746	
Study area	Rod-hours[a]	44,147	1,003	33,703	1,872
	Catch[b]	38,104	866	30,174	1,676
	Harvest[b]	22,782	518	15,893	883
	CUE[c]	0.677		0.603	

[a] Angling effort exerted by walleye anglers only.

[b] Catch and harvest estimates in number of walleye.

[c] CUE's for walleye caught, derived from observed values.

[d] Mean daily estimate of effort (rod-hours). Catch and harvest (by number) based on a six-hour fishing period.

Table 17. Distribution of catch and effort statistics for walleye anglers by census-period in the Western Basin, Lake Erie, 1984.

Sector	Statistic	Census-period AM	Census-period PM
I	Rod-hours[a]	4,186	6,770
	Catch[b]	2,474	3,443
	Harvest[b]	1,871	2,671
	CUE[c]	0.544	0.439
II	Rod-hours[a]	38,681	28,212
	Catch[b]	35,792	26,570
	Harvest[b]	20,764	13,369
	CUE[c]	0.749	0.700

[a] Angling effort exerted by walleye anglers only.

[b] Catch and harvest estimates in number of walleye.

[c] CUE's for walleye caught, derived from observed values.

Table 18. Comparative sport fishery statistics for walleye in the Western Basin, Lake Erie, 1975-84.

Sector	Statistic	Year									
		1975	1976	1977	1978	1979	1980	1981	1982	1983	1984
I	Rod-hours[a]	25,154	48,854	70,403	73,860	24,971	21,713	45,264	46,767	61,597	11,950
	Catch[b]	4,778	23,619	40,283	48,320	18,048	15,254	21,981	20,795	26,060	5,757
	Harvest[b]	4,458	23,225	40,043	45,325	16,079	14,292	21,653	19,749	24,027	4,426
	% Kept	93	98	99	94	89	94	99	95	92	77
	CUE[c]	0.190	0.484	0.572	0.654	0.723	0.703	0.486	0.445	0.423	0.482
	CUE[d]	-	-	-	0.693	0.678	0.618	0.446	0.424	0.388	0.463
II	Rod-hours[a]	20,692	48,322	55,776	72,238	70,584	69,524	91,134	59,800	55,052	69,496
	Catch[b]	2,929	26,790	30,278	73,121	70,597	43,319	50,486	29,737	21,859	62,557
	Harvest[b]	2,719	25,804	28,911	66,733	61,686	42,064	48,146	28,309	16,150	34,278
	% Kept	93	96	95	91	87	97	95	95	74	55
	CUE[c]	0.142	0.554	0.543	1.012	1.000	0.623	0.554	0.497	0.397	0.900
	CUE[d]	-	-	-	0.881	0.997	0.710	0.589	0.584	0.404	0.714
Study area	Rod-hours[a]	45,846	97,176	129,179	146,098	95,555	91,237	136,398	106,566	116,649	81,446
	Catch[b]	7,707	50,949	70,561	121,441	88,646	58,573	72,467	50,532	47,919	68,314
	Harvest[b]	7,177	49,029	68,954	112,057	77,765	56,356	69,799	48,058	40,177	38,704
	% Kept	93	96	98	92	88	96	96	95	84	57
	CUE[c]	0.168	0.524	0.559	0.831	0.928	0.642	0.531	0.474	0.411	0.839
	CUE[d]	-	-	-	0.758	0.886	0.672	0.515	0.498	0.396	0.636

[a] Estimated total angling effort.

[b] Catch and harvest estimates in number of walleye.

[c] CUE for walleye caught by all anglers derived from estimated effort (rod-hours) and estimated catch.

[d] CUE for walleye caught by walleye anglers derived from observed effort (rod-hours) and observed catch.

Table 19. Length and weight-at-age of walleye harvested in the sport fishery of the Western Basin, Lake Erie, 1984.[a]

Month	Sector	Statistic	Age-group I	II	III	IV	V	VI	VII	All
July	I	n	1	13	7	12	4	7	5	49
		$\bar{L}$	290	354	445	503	506	566	626	473
		s	-	22.4	19.0	33.7	29.3	36.0	32.1	97.1
	II	n	2	43	2	1			2	50
		$\bar{L}$	325	336	448	540			593	355
		s	7.1	23.0	25.5	-			24.7	64.6
August	I	n		18	4	2	1			25
		$\bar{L}$		369	452	556	502			402
		s		27.6	26.4	13.4	-			65.3
	II	n		27	10	8	2	1		48
		$\bar{L}$		370	454	517	517	666		424
		s		21.8	34.4	26.3	26.9	-		74.6
Study period	Study area	n	3	101	23	23	7	8	7	172
		$\bar{L}$	313	353	450	514	509	578	616	415
		s	20.8	27.9	26.9	32.4	24.1	48.7	32.5	90.0
		n	3	100	23	23	7	8	7	171
		$\bar{W}$	233	382	761	1,226	1,243	1,788	2,114	716
		s	57.7	124.2	119.6	250.8	320.7	593.9	291.1	539.8

[a] Mean total length ($\bar{L}$) and mean total weight ($\bar{W}$) are in mm and g respectively.

The pooled (n=171) length/weight regression equation is:

$$\text{Log } W(g) = -5.5890 + 3.1970 \log L(mm), \; r=0.95$$

Table 20. Estimated weight of the walleye harvest by age-group in the sport fishery of the Western Basin, Lake Erie, 1984.

Age-group	Percent frequency	Estimated harvest (number)	Mean weight (kg)	Estimated harvest (kg)
I	1.75	677	0.233	158
II	58.48	22,634	0.382	8,646
III	13.45	5,206	0.761	3,962
IV	13.45	5,206	1.226	6,383
V	4.09	1,583	1.243	1,968
VI	4.68	1,811	1.788	3,238
VII	4.09	1,583	2.114	3,346
All	100	38,704	0.716	27,712

Table 21. Catch per unit of effort (CUE) for smallmouth bass caught by sector and month in the Western Basin, Lake Erie, 1984.[a]

Month	Sector	Smallmouth bass anglers	All anglers
July	I	0.192	0.082
	II	0.275	0.110
	Study area	0.248	0.100
August	I	0.371	0.194
	II	0.264	0.120
	Study area	0.297	0.141
Study period	I	0.315	0.144
	II	0.267	0.116
Study period	Study area	0.282	0.125

[a] CUE represents the observed number of fish caught divided by the observed effort in rod-hours both for smallmouth bass anglers and all anglers.

Table 22. Catch per unit of effort (CUE) for smallmouth bass caught by sector, area and month in the Western Basin, Lake Erie, 1984.[a]

Month	Sector	Area				
		1	2	3	4	5
July	I	0.223	0.160			
	II	0.457	0.151	0.232	0.333	-[b]
August	I	0.448	0.246			
	II	0.214	0.229	0.323	2.125	0.357

[a] CUE represents the observed number of fish caught by smallmouth bass anglers divided by the corresponding observed effort in rod-hours.

[b] No smallmouth bass anglers were interviewed in this area.

Table 23. Distribution of the smallmouth bass catch by sector and month in the Western Basin, Lake Erie, 1984.

Month	Sector	Estimated catch (number)	Percent of total catch
July	I	547	7
	II	3,627	45
August	I	699	9
	II	3,200	40
Study period	I	1,245	15
	II	6,826	85
Study period	Study area	8,072	100

Table 24. Distribution of the smallmouth bass catch and harvest by sector, area and month in the Western Basin, Lake Erie, 1984.

Month	Sector	Area	Estimated catch (number)	Percent of total catch	Estimated harvest (number)	Percent kept
July	I	1	312	4	142	46
		2	235	3	179	76
	II	1	731	9	496	68
		2	494	6	352	71
		3	1,307	16	889	68
		4	1,095	14	1,062	97
		5	-[a]		-[a]	
	Study area		4,173	52	3,121	75
August	I	1	431	5	294	68
		2	267	3	192	72
	II	1	1,458	18	1,096	75
		2	303	4	274	90
		3	844	10	755	89
		4	564	7	150	27
		5	30	<1	30	100
	Study area		3,898	48	2,791	72
Study period	Study area		8,072	100	5,912	73

[a] Angling parties weren't present within this area during interview periods.

Table 25. Distribution of catch and effort statistics for smallmouth bass anglers by day-type in the Western Basin, Lake Erie, 1984.

Sector	Statistic	Day-type: Weekday	Mean[d]	Weekend day	Mean[d]
I	Rod-hours[a]	1,664	38	1,716	95
	Catch[b]	381	9	531	30
	Harvest[b]	345	8	435	24
	CUE[c]	0.215		0.356	
II	Rod-hours[a]	10,125	230	9,030	502
	Catch[b]	3,401	77	1,775	99
	Harvest[b]	2,799	64	1,378	77
	CUE[c]	0.389		0.211	
Study area	Rod-hours[a]	11,788	268	10,747	597
	Catch[b]	3,782	86	2,305	128
	Harvest[b]	3,144	71	1,813	101
	CUE[c]	0.336		0.258	

[a] Angling effort exerted by smallmouth bass anglers only.

[b] Catch and harvest estimates in number of smallmouth bass.

[c] CUE's for smallmouth bass caught, derived from observed values.

[d] Mean daily estimate of effort (rod-hours). Catch and harvest (by number) based on a six-hour fishing period.

Table 26. Distribution of catch and effort statistics for smallmouth bass anglers by census-period in the Western Basin, Lake Erie, 1984.

Sector	Statistic	Census-period AM	Census-period PM
I	Rod-hours[a]	1,500	1,880
	Catch[b]	285	627
	Harvest[b]	262	517
	CUE[c]	0.186	0.355
II	Rod-hours[a]	11,507	7,648
	Catch[b]	3,328	1,847
	Harvest[b]	2,686	1,491
	CUE[c]	0.339	0.244

[a] Angling effort exerted by smallmouth bass anglers only.

[b] Catch and harvest estimates in number of smallmouth bass.

[c] CUE's for smallmouth bass caught, derived from observed values.

Table 27. Estimated weight of the smallmouth bass harvest by age-group in the sport fishery of the Western Basin, Lake Erie, 1984.

Age-group	Percent frequency	Estimated harvest (number)	Mean weight (kg)	Estimated harvest (kg)
II	5.71	338	0.250	85
III	42.86	2,534	0.500	1,267
IV	28.57	1,689	0.730	1,233
V	11.43	676	1.200	811
VI	11.43	676	1.225	828
All	100	5,912	0.733	4,333

Table 28. Length and weight-at-age of smallmouth bass harvested in the sport fishery of the Western Basin, Lake Erie, 1984.[a]

Month	Sector	Statistic	Age-group II	III	IV	V	VI	All
July	I	n	2	5	2			11[b]
		$\bar{L}$	260	319	380			324
		s	31.8	21.9	-			50.7
	II	n				2	1	3
		$\bar{L}$				435	410	427
		s				35.4	-	28.9
August	I	n		1	2	1		4
		$\bar{L}$		298	363	422		361
		s		-	34.6	-		54.5
	II	n		9	6	1	3	21[c]
		$\bar{L}$		319	353	384	418	354
		s		20.9	10.3	-	12.5	44.6
Study period	Study area	n	2	15	10	4	4	39[d]
		$\bar{L}$	260	318	360	419	416	352
		s	31.8	20.4	17.9	31.6	11.0	51.8
		n	2	15	10	4	4	39[d]
		$\bar{W}$	250	500	730	1,200	1,225	733
		s	70.7	100.0	82.3	258.2	125.8	347.4

[a] Mean total length ($\bar{L}$) and mean total weight ($\bar{W}$) are in mm and g respectively. The pooled (n=39) length/weight regression equation is:

$$\text{Log } W(g) = -5.2503 + 3.1740 \log L(mm), \quad r=0.98$$

[b] Mean total length and standard deviation for all fish were calculated for 11 fish, two of which were not aged.

[c] Mean total length and standard deviation for all fish were calculated for 21 fish, two of which were not aged.

[d] Mean total length and mean total weight and their standard deviations were calculated for 39 fish, four of which were not aged.

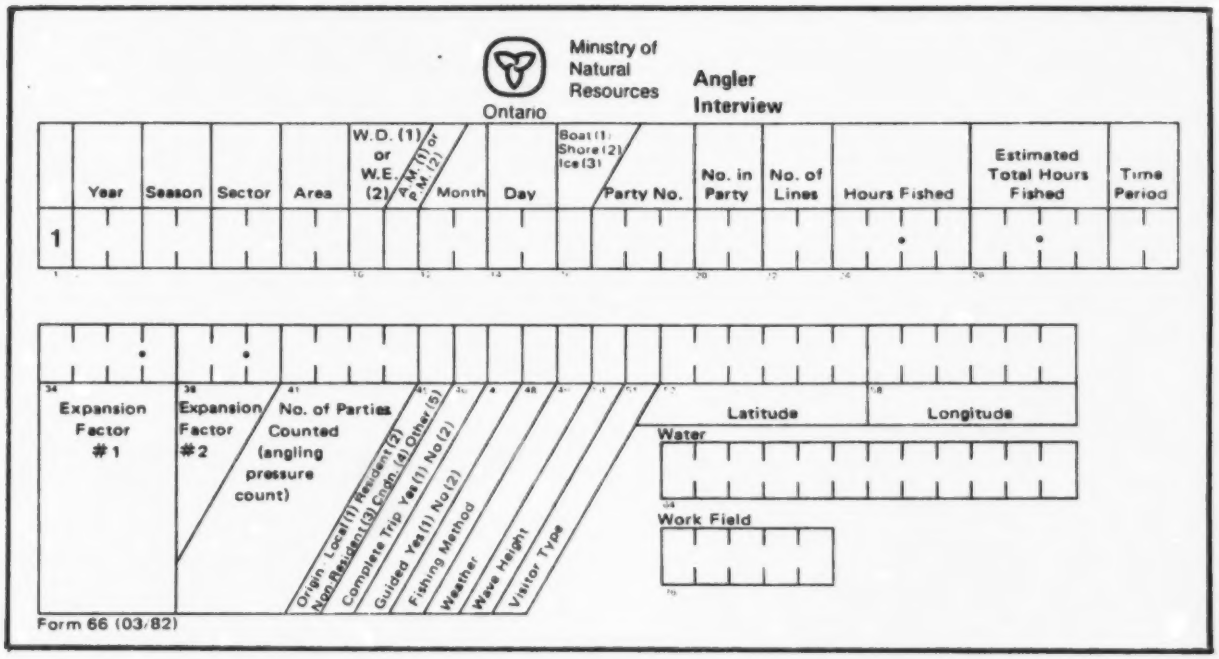
Table 29. Residency status of anglers in the Western Basin, Lake Erie, 1984.[a]

Month	Sector	Residency status	Number of interviews	Percent of total
July	I	NR	260	
		R	0	
	II	NR	393	
		R	106	
	Study area	NR	653	86
		R	106	14
August	I	NR	231	
		R	0	
	II	NR	655	
		R	37	
	Study area	NR	886	96
		R	37	4
Study period	I	NR	491	100
		R	0	0
	II	NR	1048	88
		R	143	12
Study period	Study area	NR	1539	91
		R	143	9

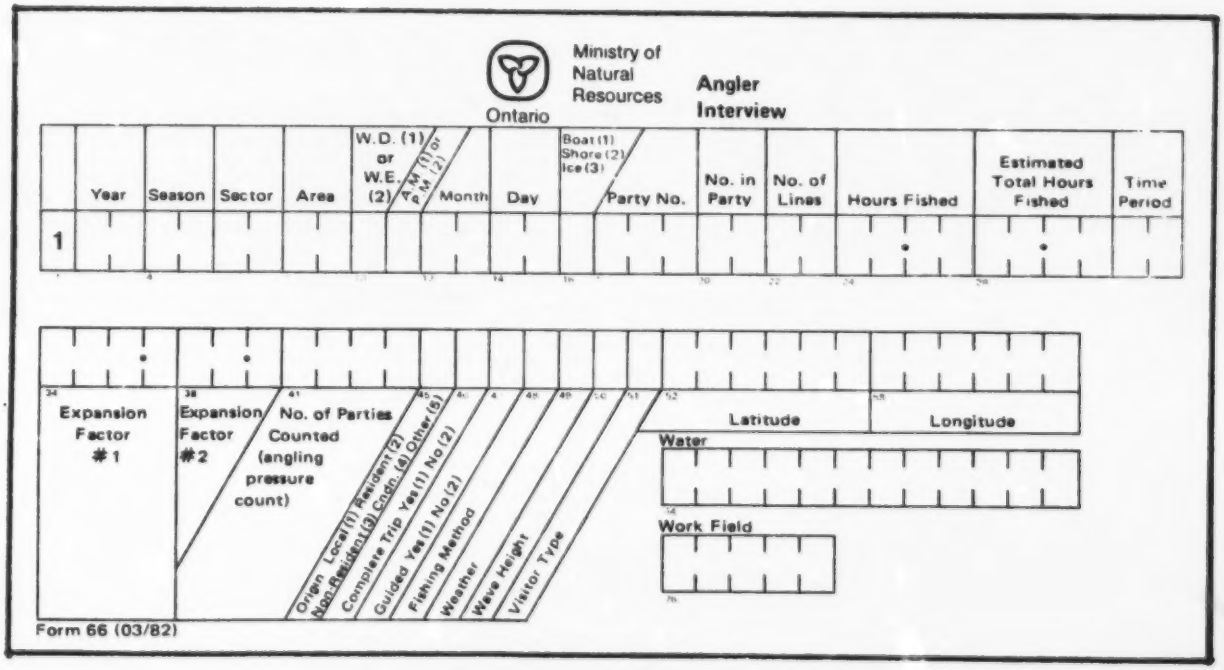
[a] "Resident" (R) applied to anglers living in Ontario, while "Non-Resident" (NR) applied to all other anglers. Historically, most non-residents were citizens of the United States.

Appendix I: Field forms.

1. Angler interview form.



Reverse side.



2. Boat count form.

INSTANTANEOUS BOAT COUNT

Sector ☐ Boat Count No. ☐ Day ☐☐ Month ☐☐ Year ☐☐

Area	No. of Boats Counted			Count Time	
	Sailing	Pleasure	Fishing	Start (hrs.)	End (hrs.)
1					
2					
3					
4					
5					

If part of area not counted give reason:

L.E.F.A.U. (04/80)

3. Weather and water report form.

WEATHER AND WATER REPORT

		AREA				
		1	2	3	4	5
	LAT.					
	LONG.					
TIME: AM PM	EXACT					
TEMPERATURE:	AIR					
(°C)	WATER					
WATER SURFACE						
WAVE HEIGHT (m)						
CLOUD COVER (%)						
WIND: DIRECTION						
STRENGTH	(Knots)					

COMMENTS:

Appendix II: Computational methods (Petzold 1980).

The total estimated harvest (caught minus released) of a species in a stratum (T_h) was calculated as follows:

$$T_h = \frac{D_h}{d_h} \sum_{i}^{d_h} \hat{r}_{hi} \; N_{hi} \; \hat{\bar{x}}_{hi} \; \hat{\bar{y}}_{hi}$$

where

D_h = the number of days in stratum h

d_h = the number of days sampled in stratum h

$\hat{r}_{hi}$ = the sample catch per unit of effort on the i'th day for all anglers interviewed

$\hat{\bar{x}}_{hi}$ = the sample mean number of boats per instantaneous boat count on the i'th day

$\hat{\bar{y}}_{hi}$ = the sample mean number of rods per boat on the i'th day

$\hat{\bar{z}}_{hi}$ = the sample mean number of anglers per boat on the i'th day

N_{hi} = the number of fishing hours in the sampling period

The sample catch per unit of effort ($\hat{r}_{hi}$), the sample mean number of boats per boat count ($\hat{\bar{x}}_{hi}$) and the sample mean number of rods per boat ($\hat{\bar{y}}_{hi}$) were calculated as follows:

$$\hat{r}_{hi} = \frac{\sum_{j}^{n_{hi}} c_{hij}}{\sum_{j}^{n_{hi}} e_{hij}}$$

$$\hat{\bar{x}}_{hi} = \frac{\sum_{j}^{m_{hi}} x_{hij}}{m_{hi}}$$

$$\hat{\bar{y}}_{hi} = \frac{\sum_{j}^{n_{hi}} y_{hij}}{n_{hi}}$$

where

c_{hij} = the number of fish kept by the j'th sampled party on the i'th day

e_{hij} = the number of rod-hours fished by the j'th sampled party on the i'th day

n_{hi} = the number of parties interviewed on the i'th day

x_{hij} = the number of boats counted on the j'th boat count

m_{hi} = the number of boat counts on the i'th day

y_{hij} = the number of rods in the j'th party

The estimated total catch of a species, Tc (i.e., those kept plus those released) was estimated in the same manner as for harvest except $\hat{\bar{r}}_{hi}$ was calculated using all fish caught.

The total rod-hours in a stratum (E_h) and angler-hours (A_h) in a stratum (h) were calculated as:

$$E_h = \frac{D_h}{d_h} \sum_{i}^{d_h} N_{hi} \; \hat{\bar{x}}_{hi} \; \hat{\bar{y}}_{hi}$$

$$A_h = \frac{D_h}{d_h} \sum_{i}^{d_h} N_{hi} \; \hat{\bar{x}}_{hi} \; \hat{\bar{z}}_{hi}$$

Appendix III: Common and scientific names of fish species reported during the creel census in the Western Basin, Lake Erie, 1984.

Common name	Scientific name[a]
Rock bass	Ambloplites rupestris (Rafinesque)
Smallmouth bass	Micropterus dolomieui Lacépède
White bass	Morone chrysops (Rafinesque)
Common carp	Cyprinus carpio Linnaeus
Channel catfish	Ictalurus punctatus (Rafinesque)
Freshwater drum	Aplodinotus grunniens Rafinesque
White perch	Morone americana (Gmelin)
Yellow perch	Perca flavescens (Mitchill)
Walleye	Stizostedion vitreum vitreum (Mitchill)

[a] After Robins et al. 1980.

Appendix IV: Monthly summaries of effort, catch per unit effort (CUE), catch and harvest.

Explanatory Notes:

1. Sector 1 and 2 represents the Western Basin.

2. Computer codes denoting season are 7 for July and 8 for August.

3. Computer codes denoting day-type are 1 for weekday and 2 for weekend days.

4. Computer codes denoting time are 1 for AM (0900-1400 h) and 2 for PM (1400-1900 h).

5. Multiple numerical codes indicate pooling of strata.

6. A 'Dummy' encountered in the species variable list is an integral part of the computer program used to indicate that either (1) a party was interviewed that was not seeking any species in particular and had not caught any fish or that (2) a boat count had been undertaken with zero boats observed.

7. SE represents standard error of estimate.
Note: A minimum of two sampling days is required to calculate a standard error of estimate for any given stratum. This condition was met by all strata and reported SE's are valid.

SUMMARY FOR:

SEASON 7 8
SECTOR 1 2
AREA 1 2 3 4 5
DAY-TYPE 1 2
TIME-PERIOD 1 2

NUMBER SAMPLING PERIODS	NUMBER PARTIES INTERV.	MEAN ANG/ PARTY	MEAN RODS/ PARTY	OBSERVED ANGLER HOURS	OBSERVED ROD HOURS	ESTIM. ANGLER HOURS	STD. ERROR	ESTIM. ROD HOURS	STD. ERROR	NO. RESI-DENTS	NO. NON RES.	NUMBER PARTY COUNTS	MEAN PARTIES/ COUNT
146	498	3.58	3.53	5698	5642	821637	11588	814467	11570	143	1539	268	5.03

CATCH SUMMARY(ALL FISHERMEN)

SPECIES	CODE	OBS. CATCH	OBS. KEPT	OBSERVED CATCH/ RD-HR	OBSERVED KEPT/ RD-HR	WEIGHTED CATCH/ RD-HR	WEIGHTED KEPT/ RD-HR	ESTIM. CATCH	(SE)	ESTIM. HARVEST	(SE)
DUMMY	999	0	0	0.000	0.000	0.000	0.000	0	0	0	0
SHEEPHE	371	1943	9	0.344	0.002	0.445	0.001	36270	8966	51	34
WALLEYE	334	3342	2165	0.592	0.384	0.839	0.475	68314	14102	38704	6861
Y. PERC	331	70	29	0.012	0.005	0.012	0.003	940	492	239	91
S. BASS	316	706	519	0.125	0.092	0.099	0.073	8072	1496	5912	1239
BLUEGIL	314	0	0	0.000	0.000	0.000	0.000	0	0	0	0
R. BASS	311	33	16	0.006	0.003	0.005	0.002	367	155	152	102
W. BASS	302	74	18	0.013	0.003	0.020	0.003	1611	391	278	212
W. PERC	301	132	22	0.023	0.004	0.027	0.002	2236	509	200	84
C. CATF	234	411	101	0.073	0.018	0.102	0.020	8306	1852	1589	365
CARP	186	1	0	0.000	0.000	0.000	0.000	18	17	0	0

CATCH SUMMARY(SPECIES FISHERMEN)

SPECIES	CODE	OBS. CATCH	OBS. KEPT	OBSERVED CATCH/ RD-HR	OBSERVED KEPT/ RD-HR	WEIGHTED CATCH/ RD-HR	WEIGHTED KEPT/ RD-HR	ESTIM. CATCH	(SE)	ESTIM. HARVEST	(SE)	NUMBER PARTIES	OBS. ROD-HRS	ESTIM. ROD-HRS	(SE)
SHEEPHE	371	26	6	0.403	0.094	0.406	0.094	33	34	0	8	1	64	96	83
WALLEYE	334	3342	2165	0.636	0.412	0.877	0.497	68278	14113	38675	6875	468	5257	77850	11398
Y. PERC	331	39	29	0.241	0.180	0.182	0.153	243	98	205	76	11	162	1337	397
S. BASS	316	608	510	0.282	0.237	0.270	0.220	6083	1098	4957	926	122	2154	22535	3993
BLUEGIL	314	0	0	0.000	0.000	0.000	0.000	0	0	0	0	1	4	227	197
R. BASS	311	20	16	0.292	0.234	0.530	0.422	227	147	181	107	4	69	428	202
W. BASS	302	18	18	0.632	0.632	1.210	1.210	453	389	453	389	4	29	375	226
W. PERC	301	18	17	0.104	0.099	0.124	0.120	147	62	142	62	12	173	1186	505
C. CATF	234	128	87	0.176	0.120	0.315	0.161	2478	995	1268	354	43	728	7860	1247

SUMMARY FOR:

SEASON 7
SECTOR 1
AREA 1 2
DAY-TYPE 1 2
TIME-PERIOD 1 2

NUMBER SAMPLING PERIODS	NUMBER PARTIES INTERV.	MEAN ANG/ PARTY	MEAN RODS/ PARTY	OBSERVED ANGLER HOURS	OBSERVED ROD HOURS	ESTIM. ANGLER HOURS	STD. ERROR	ESTIM. ROD HOURS	STD. ERROR	NO. RESI- DENTS	NO. NON RES.	NUMBER PARTY COUNTS	MEAN PARTIES/ COUNT
20	89	3.03	3.00	826	813	6743(	949)	6676(	916)	0	260	40	3.22

CATCH SUMMARY(ALL FISHERMEN)

SPECIES	CODE	OBS. CATCH	OBS. KEPT	OBSERVED CATCH/ RD-HR	OBSERVED KEPT/ RD-HR	WEIGHTED CATCH/ RD-HR	WEIGHTED KEPT/ RD-HR	ESTIM. CATCH	(SE)	ESTIM. HARVEST	(SE)
DUMMY	999	0	0	0.000	0.000	0.000	0.000	0(	0)	0(	0)
SHEEPHE	371	486	1	0.598	0.001	0.591	0.001	3948(	758)	5(	5)
WALLEYE	334	376	294	0.463	0.362	0.464	0.354	3100(	464)	2363(	299)
S. BASS	316	67	32	0.082	0.039	0.082	0.048	547(	105)	321(	100)
R. BASS	311	5	1	0.006	0.001	0.007	0.001	46(	31)	10(	9)
W. BASS	302	6	0	0.007	0.000	0.009	0.000	63(	44)	0(	0)
W. PERC	301	18	6	0.022	0.007	0.021	0.005	141(	54)	31(	17)
C. CATF	234	53	17	0.065	0.021	0.059	0.021	392(	45)	143(	45)

CATCH SUMMARY(SPECIES FISHERMEN)

SPECIES	CODE	OBS. CATCH	OBS. KEPT	OBSERVED CATCH/ RD-HR	OBSERVED KEPT/ RD-HR	WEIGHTED CATCH/ RD-HR	WEIGHTED KEPT/ RD-HR	ESTIM. CATCH	(SE)	ESTIM. HARVEST	(SE)	NUMBER PARTIES	OBS. ROD-HRS	ESTIM. ROD-HRS	(SE)
WALLEYE	334	376	294	0.477	0.373	0.487	0.371	3102(	460)	2362(	293)	86	789	6375	844
S. BASS	316	41	32	0.192	0.150	0.222	0.199	333(	93)	298(	93)	17	214	1499	436
R. BASS	311	1	1	0.333	0.333	0.333	0.333	30(	27)	30(	27)	1	3	90	80
W. PERC	301	6	6	0.145	0.145	0.205	0.205	46(	27)	46(	27)	4	42	226	132
C. CATF	234	15	15	0.138	0.138	0.154	0.154	101(	27)	101(	27)	7	109	653	160

SUMMARY FOR:

SEASON 7
SECTOR 2
AREA 1 2 3 4 5
DAY-TYPE 1 2
TIME-PERIOD 1 2

NUMBER SAMPLING PERIODS	NUMBER PARTIES INTERV.	MEAN ANG/ PARTY	MEAN RODS/ PARTY	OBSERVED ANGLER HOURS	OBSERVED ROD HOURS	ESTIM. ANGLER HOURS	STD. ERROR	ESTIM. ROD HOURS	STD. ERROR	NO. RESI- DENTS	NO. NON RES.	NUMBER PARTY COUNTS	MEAN PARTIES/ COUNT
51	159	3.42	3.34	1442	1415	34411(	9331)	34088(	9338)	106	393	90	5.69

CATCH SUMMARY(ALL FISHERMEN)

SPECIES	CODE	OBS. CATCH	OBS. KEPT	OBSERVED CATCH/ RD-HR	OBSERVED KEPT/ RD-HR	WEIGHTED CATCH/ RD-HR	WEIGHTED KEPT/ RD-HR	ESTIM. CATCH (SE)	ESTIM. HARVEST (SE)
DUMMY	999	0	0	0.000	0.000	0.000	0.000	0(0)	0(0)
SHEEPHE	371	646	0	0.456	0.000	0.638	0.000	21755(8608)	0(0)
WALLEYE	334	1486	704	1.050	0.497	1.069	0.465	36433(11149)	15834(4320)
Y. PERC	331	4	0	0.003	0.000	0.003	0.000	92(51)	0(0)
S. BASS	316	156	109	0.110	0.077	0.106	0.082	3627(1291)	2800(1134)
R. BASS	311	4	0	0.003	0.000	0.002	0.000	72(38)	0(0)
W. BASS	302	51	16	0.036	0.011	0.035	0.007	1195(375)	241(210)
W. PERC	301	41	8	0.029	0.006	0.026	0.003	902(361)	109(76)
C. CATF	234	147	36	0.104	0.025	0.106	0.021	3603(1335)	720(348)

CATCH SUMMARY(SPECIES FISHERMEN)

SPECIES	CODE	OBS. CATCH	OBS. KEPT	OBSERVED CATCH/ RD-HR	OBSERVED KEPT/ RD-HR	WEIGHTED CATCH/ RD-HR	WEIGHTED KEPT/ RD-HR	ESTIM. CATCH (SE)	ESTIM. HARVEST (SE)	NUMBER PARTIES	OBS. ROD-HRS	ESTIM. ROD-HRS (SE)
WALLEYE	334	1496	704	1.051	0.498	1.070	0.465	36428(11149)	15830(4320)	158	1414	34046 9339
S. BASS	316	120	102	0.275	0.234	0.281	0.250	2141(820)	1903(789)	32	436	7613 2811
W. BASS	302	16	16	1.185	1.185	1.560	1.560	440(389)	440(389)	2	14	282 218
W. PERC	301	8	8	0.119	0.119	0.123	0.123	93(55)	83(55)	4	68	672 462
C. CATF	234	59	36	0.349	0.213	0.521	0.223	1557(980)	667(342)	16	169	2991 1023

SUMMARY FOR:

SEASON 8
SECTOR 1
AREA 1 2
DAY-TYPE 1 2
TIME-PERIOD 1 2

NUMBER SAMPLING PERIODS	NUMBER PARTIES INTERV.	MEAN ANG/ PARTY	MEAN RODS/ PARTY	OBSERVED ANGLER HOURS	OBSERVED ROD HOURS	ESTIM. ANGLER HOURS	STD. ERROR	ESTIM. ROD HOURS	STD. ERROR	NO. RESI-DENTS	NO. NON RES.	NUMBER PARTY COUNTS	MEAN PARTIES/ COUNT
20	66	3.76	3.73	1012	1007	5332(	670)	5274(	650)	0	231	34	2.65

CATCH SUMMARY(ALL FISHERMEN)

SPECIES	CODE	OBS. CATCH	OBS. KEPT	OBSERVED CATCH/ RD-HR	OBSERVED KEPT/ RD-HR	WEIGHTED CATCH/ RD-HR	WEIGHTED KEPT/ RD-HR	ESTIM. CATCH (SE)	ESTIM. HARVEST (SE)
DUMMY	999	0	0	0.000	0.000	0.000	0.000	0(0)	0(0)
SHEEPHE	371	326	0	0.324	0.000	0.332	0.000	1752(363)	0(0)
WALLEYE	334	383	292	0.380	0.290	0.504	0.391	2657(606)	2064(467)
Y. PERC	331	53	21	0.053	0.021	0.132	0.027	696(486)	143(82)
S. BASS	316	195	145	0.194	0.144	0.132	0.092	699(313)	487(265)
R. BASS	311	22	15	0.022	0.015	0.038	0.027	199(143)	143(102)
W. BASS	302	2	0	0.002	0.000	0.005	0.000	27(23)	0(0)
W. PERC	301	13	1	0.013	0.001	0.015	0.001	79(35)	3(2)
C. CATF	234	37	15	0.037	0.015	0.047	0.012	250(110)	64(36)

CATCH SUMMARY(SPECIES FISHERMEN)

SPECIES	CODE	OBS. CATCH	OBS. KEPT	OBSERVED CATCH/ RD-HR	OBSERVED KEPT/ RD-HR	WEIGHTED CATCH/ RD-HR	WEIGHTED KEPT/ RD-HR	ESTIM. CATCH (SE)	ESTIM. HARVEST (SE)	NUMBER PARTIES	OBS. ROD-HRS	ESTIM. ROD-HRS (SE)
WALLEYE	334	383	292	0.450	0.343	0.614	0.476	2814(606)	2180(462)	59	851	4582 710
Y. PERC	331	31	21	0.596	0.404	0.462	0.353	163(93)	125(70)	3	52	353 198
S. BASS	316	174	143	0.371	0.305	0.308	0.256	579(333)	481(266)	21	469	1880 800
R. BASS	311	19	15	0.290	0.229	0.582	0.446	197(145)	151(104)	3	66	338 186
W. PERC	301	1	1	0.067	0.067	0.067	0.067	2(2)	2(2)	1	15	36 31
C. CATF	234	8	5	0.059	0.043	0.083	0.050	26(16)	16(10)	3	117	318 237

SUMMARY FOR:

SEASON 4
SECTOR 2
AREA 1 2 3 4 5
DAY-TYPE 1 2
TIME-PERIOD 1 2

NUMBER SAMPLING PERIODS	NUMBER PARTIES INTERV.	MEAN ANG/ PARTY	MEAN RODS/ PARTY	OBSERVED ANGLER HOURS	OBSERVED ROD HOURS	ESTIM. ANGLER HOURS	STD. ERROR	ESTIM. ROD HOURS	STD. ERROR	NO. RESI- DENTS	NO. NON RES.	NUMBER PARTY COUNTS	MEAN PARTIES/ COUNT
55	184	3.92	3.89	2418	2407	35677(	6772)	35408(	6738)	37	655	104	5.94

CATCH SUMMARY(ALL FISHERMEN)

SPECIES	CODE	OBS. CATCH	OBS. KEPT	OBSERVED CATCH/ RD-HR	OBSERVED KEPT/ RD-HR	WEIGHTED CATCH/ RD-HR	WEIGHTED KEPT/ RD-HR	ESTIM. CATCH	(SE)	ESTIM. HARVEST	(SE)
DUMMY	999	0	0	0.000	0.000	0.000	0.000	0(	0)	0(	0)
SHEEPHE	371	485	8	0.201	0.003	0.249	0.001	8815(	2361)	46(	34)
WALLEYE	334	1097	875	0.456	0.363	0.738	0.521	26125(	8600)	18444(	5300)
Y. PERC	331	13	8	0.005	0.003	0.004	0.003	151(	61)	96(	38)
S. BASS	316	288	233	0.120	0.097	0.090	0.065	3200(	679)	2305(	413)
BLUEGIL	314	0	0	0.000	0.000	0.000	0.000	0(	0)	0(	0)
R. BASS	311	2	0	0.001	0.000	0.001	0.000	51(	32)	0(	0)
W. BASS	302	15	2	0.006	0.001	0.009	0.001	325(	97)	37(	30)
W. PERC	301	60	7	0.025	0.003	0.031	0.002	1114(	353)	56(	32)
C. CATF	234	174	33	0.072	0.014	0.115	0.019	4062(	1278)	663(	95)
CARP	186	1	0	0.000	0.000	0.001	0.000	18(	17)	0(	0)

CATCH SUMMARY(SPECIES FISHERMEN)

SPECIES	CODE	OBS. CATCH	OBS. KEPT	OBSERVED CATCH/ RD-HR	OBSERVED KEPT/ RD-HR	WEIGHTED CATCH/ RD-HR	WEIGHTED KEPT/ RD-HR	ESTIM. CATCH	(SE)	ESTIM. HARVEST	(SE)	NUMBER PARTIES	OBS. ROD-HRS	ESTIM. ROD-HRS	(SE)
SHEEPHE	371	26	5	0.406	0.394	0.406	0.094	39(	34)	9(	8)	1	64	96	83
WALLEYE	334	1097	875	0.498	0.397	0.790	0.557	25939(	8619)	18304(	5320)	165	2204	32847	6441
Y. PERC	331	8	8	0.073	0.073	0.082	0.082	80(	30)	80(	30)	9	110	985	344
S. BASS	316	273	233	0.264	0.225	0.263	0.197	3035(	644)	2274(	394)	52	1036	11542	2686
BLUEGIL	314	0	0	0.000	0.000	0.000	0.000	0(	0)	0(	0)	1	4	227	197
W. BASS	302	2	2	0.133	0.133	0.145	0.145	13(	9)	13(	9)	2	15	93	58
W. PERC	301	3	2	0.062	0.041	0.062	0.045	16(	10)	11(	7)	3	49	252	153
C. CATF	234	46	31	0.138	0.093	0.204	0.124	794(	168)	484(	88)	17	334	3898	654